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Illustrated checklist of the carabid beetles (Coleoptera, Carabidae) of the Otonga Nature Reserve in NW Ecuador, with ecological and biogeographic comments

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Abstract. – We provide a checklist of the 107 Carabid species recorded to date from the Otonga Nature Reserve, an equatorial cloud forest covering about ten square km, ranging in altitude from 1600 m to 2200 m in NW Ecuador, in the Chocó ecoregion. The habitus of most species is illustrated, and information is given on their habitat and distribution.

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Introduction

The Otonga Nature Reserve (Reserva Natural Integral de Otonga) is a strictly protected montane cloud forest (Fig. 1) located in the Ecuadorian northwestern Andean region (Cotopaxi Province), ranging in altitude from 1600 m a.s.l. on the border of the reserve at Río Esmeraldas to 2200 m a.s.l. on top of the surrounding ridges. Currently it covers an area of about 1000 ha, and is represented by 80% primary forest, 18% second-growth forest and only 2% altered forest. The Otonga forest belongs to the Chocó-Darien Global Ecoregion, also known as the Chocó Biogeographic Region (Fagua & Ramsey, 2019), an area of the Western slope of the Andean Cordillera which is considered one of the most important hotspots of biodiversity in the world, with a very high endemism rate (Myers *et al*., 2000).

Tropical montane cloud forest (TMCF) is one of the most threatened ecosystems in the world (Doumenge *et al*., 1995), occupying 0.26% of the world's landmass. These forests are characterized by a high degree of humidity and an almost continuous presence of fog and clouds. They are crucial reservoirs of plant and animal diversity, with high rates of endemism (Jones *et al*., 2008). In Ecuador's Western Cordillera, TMCF extends at elevations between 1300/1500 m and 3000/3200 m (Sierra, 1999). The cloud forest of Otonga occupies a median position within this elevational range, which makes it highly representative of this ecosystem.

The acquisition of the first hectares of the Otonga forest dates back to 1988, and since then the protected area never ceased to extend under the coordination and supervision of Giovanni Onore (Fig. 2), an entomologist and a Marianist friar from Costigliole d'Asti (Italy), professor of entomology at the Pontificia Universidad Católica del Ecuador (PUCE) in Quito since 1981, who gave a decisive impulse to researches on invertebrates in the country thanks to his communicative energy. He dedicated and still is dedicating himself to save from destruction large areas of tropical cloud forest; he achieved this goal by financial resources from private citizens and companies of the whole world, mainly Italy. Currently he is recognized as one of the most important contributors to the knowledge of the Ecuadorian entomological fauna (Barragán *et al.*, 2009). The control of the Reserve was entrusted since the beginning to the Tapia family, Don César and his sons, who have dealt with the protection of fauna and flora, also starting guide activities for visitors.

Over the two last decades many researchers visited the Otonga forest with study purposes, devoting a lot of scientific papers to its flora and fauna (see, among others, Belló & Osella, 2008; Dupérré & Tapia, 2017; Freiberg, 1998; Freile *et al.,* 2003; Lee *et al.,* 2021; Maioglio *et al.,* 2022). Ground beetles (Coleoptera, Carabidae) from Otonga were also studied by different carabidologists (see among others Allegro *et al.,* 2008; Casale, 2008; Deuve, 2000; Moret, 2008; Moret & Murienne, 2020; Toledano, 2008), leading to the discovery of many new species which were described in specialized taxonomic papers, but a comprehensive checklist of the carabid species known to live in the reserve, one of the most intensively sampled cloud forest areas in the Northern Andes, was never attempted. This paper tries to fill this gap by providing a list of the species recorded so far from the Otonga Forest, mainly based on the study of specimens collected over the past thirty years and deposited in more than twenty public and private collections, as well as specimens sampled by the authors themselves during their visits to the reserve in 2001 (P.M.) and 2023 (G.A.).

The aim of the present study is also to foster future research in systematics, biogeography, ecology and conservation of neotropical Carabidae, by presenting the available information on the habitat,

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ecology and distribution of the species present in Otonga. The photographs that accompany the checklist are intended to facilitate their identification, a crucial issue for researchers and students working in the fields of ecology and biodiversity who are not familiar with carabid taxonomy.

Material and Methods

Study area

The Otonga Nature Reserve is located in the Pacific slope of Ecuadorian Andes, in the westernmost part of the Cotopaxi province, 4.5 km northwest of San Francisco de las Pampas (0°25'15" S, 79°00'23" W). The reserve covers more than 1500 hectares, from 1600 to 2100 m a.s.l. It is characterized by a craggy topography, with steep slopes and small streams at the bottom of deep valleys (Duperré & Tapia, 2014). The annual humidity ranges between 80–90%, with 2000–2500 mm of annual rainfall, and an average annual temperature of 16°C (Jarrín, 2001). 80% of the reserve is covered by primary forest, divided into evergreen montane forest in the lowest part of the reserve, and montane cloud forest (Valencia *et al*., 1999) from 1800 m to the summit ridge.

Only the species living in the Otonga Reserve, between 1600–2200 m a.s.l., are considered in this checklist. Those collected at San Francisco de las Pampas (1300-1500 m a.s.l.), an area a few kilometers downstream, but not at Otonga, are not included. All the more so, species from the "sister" reserve of Otongachi (Maioglio *et al*., 2022) were not considered, because this reserve is situated at a much lower elevation (800-1200 m) and therefore belongs to a different ecosystem.

Sampling methods

Collections were made over a long period of time, from 1988 to 2023, and by over 40 different collectors, including students of the Biology Department of the PUCE. Several sampling methods were used, but unfortunately they are rarely mentioned on the locality labels. Part of the collections were made by active hand searching by day under stones on river banks, under logs or loose barks in the forest, and by night in the same habitats, especially on the surface of the leaf litter and on understory or edge vegetation. Other methods include vegetation sweeping and beating, litter sifting, pitfall trapping, light trapping and pyrethrin fogging on low branches covered with epiphytes.

Taxonomic treatment

Species that could be separated with confidence, but could not be named, are noted by numbers (sp. 1, 2, etc.). Some of these species may be new. The mention "new species", after the number, means that based on a recent revision or a comparison with type material of the described species of the group, the authors or a specialist they consulted (e.g. P. Bulirsch for Scaritini) were able to assert that the species is new to science.

The mention "type locality" means that Otonga was designated as the type locality of a species, or that it is the place where the holotype was collected. The mention "type series includes Otonga" means that some

Fig. **1**. View of the cloud forest of Otonga (photo P. Moret).

Fig. 2. Giovanni Onore in the Otonga reserve in 2023 (photo G. Allegro).

of the paratypes were collected at Otonga. Bibliographic references are given when information about the presence of non-type material at Otonga was retrieved from a publication. Mention of public or private collections, without bibliographic reference, refers to unpublished material examined by the authors.
The order of subfamilies and tribes in the checklist follows the catalogue of Bousquet (2012, table 3), except for Rhysodinae; the nomenclature is based on the Carabcat Database by Lorenz (2021). Within tribes, genera and species are ordered alphabetically.

Illustrations

Most species are originally illustrated. The digital images of habitus were obtained from a digital camera Leica DFC295 attached to a Leica M205 C stereomicroscope (G.A.) and from a Zeiss Stemi 508 trinocular stereomicroscope coupled with a Zeiss AxioCam 105 microscope camera (P.M.).

Habitat preferences

Information about habitat and behavior of the species is not always available. When information exists, species are distributed in four broad categories:

Riparian: river banks, under stones, in sandy soil or in accumulated piles of vegetal debris.

Edaphic: forest undergrowth, in the leaf litter or on embankments along the footpaths.

Dead wood: under bark of dead trees or inside fallen decaying logs.

Arboreal: in the canopy of living trees or in epiphytes.
Although the imagos of most species seem to be active year-round, months of captures are indicated.

Current location of the studied material (museums and private collections)

CAC: Achille Casale Collection, Torino, Italy.
CAVT: Augusto Vigna Taglianti Collection, Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy.
CFC: Fabio Cassola Collection, Museo Civico di Zoologia, Roma, Italy.
CGA: Gianni Allegro Collection, Moncalvo, Asti, Italy.
CJM: Jirí Moravec Collection, Adamov, Czech Republic.
CLP: Luca Picciau Collection, Torino, Italy.
CLT: Luca Toledano Collection, Verona, Italy.
CMNH: Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA.
CPB: Collection Petr Bulirsch Collection, Prague, Czech Republic.
CPMa: Paolo Magrini Collection, Firenze, Italy.
CPMo: Pierre Moret Collection, Toulouse University, France.
CPMG: Pier Mauro Giachino Collection, San Martino Canavese (Torino), Italy.
CUIC: Cornell University Insect Collection, Ithaca, New York, USA.
CVO: Vicente Ortuño Collection, University of Alcalá, Spain.
CWR: Walter Rossi Collection, Università dell'Aquila, Coppito, Italy.
MCZR: Museo Civico di Zoologia, Roma, Italy.
MNHN: Muséum National d'Histoire Naturelle, Paris, France.
MSNG: Museo Civico di Storia Naturale "Giacomo Doria", Genova, Italy.
NMNH: National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA.
MGKC: Michael G. Kippenhan Collection, Portland, Oregon, USA.
MSNV: Museo Civico di Scienze Naturali, Verona, Italy.
MZLS: Museo di Storia Naturale, Sezione di Zoologia "La Specola", University of Florence, Italy.
QCAZ: Museo de Zoología, Pontificia Universidad Católica del Ecuador, Quito, Ecuador.
UASM: Strickland Entomological Museum, University of Alberta, Edmonton, Canada.

Results

RHYSODINAE Laporte, 1840

RHYSODINI Laporte, 1840

1. ***Clinidium insigne*** Grouvelle, 1903
(Fig. 3)

Rotten logs, under barks and in decomposed wood. March, July, November (CPMo, QCAZ).
Other provinces: Pichincha, Bolívar (Bell & Bell, 2000).
Other countries: Colombia, Venezuela (Bell & Bell, 1985; Bell & Bell, 2009).
Brachypterous.

2. ***Clinidium oberthueri*** Grouvelle, 1903

Pitfall trap. July (CGA).
Other provinces: Napo, 3200 m (Bell & Bell, 1985).
Brachypterous.

CICINDELINAE Latreille, 1802

CICINDELINI Latreille, 1802

3. ***Oxygonia oberthueri*** W. Horn, 1896
(Fig. 4)

Riparian, also on clayey banks along streams, where the larva dugs trapping burrows (Di Giulio & Vigna-Taglianti, 2001). February (CJM, Moravec 2017).
Other provinces: Esmeraldas, Santo Domingo, Pichincha, Cañar, Bolívar, Azuay, El Oro (Pearson *et al*., 1999; Moravec, 2017).
Fully winged.

4. ***Oxygonia onorei*** Cassola & Kippenhan, 1997

(Fig. 5)

Type series includes Otonga.
Riparian. April, May (CFC, CJM, MGKC, Moravec 2017).
Other provinces: Pichincha (Pearson *et al*., 1999; Moravec 2017).
Fully winged.

MEGACEPHALINI Laporte, 1834

5. ***Pseudoxycheila angustata*** Chaudoir, 1865

Edaphic, clay banks along footpaths. March, May, November (CGA, CMNH, QCAZ).
Other provinces: Carchi, Imbabura, Pichincha (Pearson *et al.,* 1999).
Fully winged.

6. ***Pseudoxycheila chaudoiri*** Dokhtouroff, 1882

(Fig. 6)

Edaphic, clayey banks along footpaths or streams, where the larva dugs trapping burrows ((Di Giulio & Vigna-Taglianti 2001). March, May, November (CGA, CMNH, CPMo, QCAZ).
Other provinces: Carchi, Esmeraldas, Imbabura, Pichincha, Tungurahua, Napo, Chimborazo, Bolívar, Cañar, Azuay, Pastaza, Morona-Santiago, Zamora-Chinchipe (Pearson *et al*., 1999).
Other country: Colombia.
Fully winged.

SCARITINAE Bonelli, 1810

SCARITINI Bonelli, 1810

7. ***Taeniolobus ecuadorensis*** (Bänninger, 1941)

(Fig. 7)

Dead wood, under barks. July (CPB, CPMo).
Brachypterous.

CLIVININI Rafinesque, 1815

8. ***Ardistomis bulirschi*** Valdés, 2009

Habitat unknown. July (CPB, CPMo, QCAZ).
Other provinces: Pichincha, Guayas (Valdés, 2009).
Fully winged.

9. ***Ardistomis allegroi*** Bulirsch & Magrini, 2024

(Fig. 8)

Type locality.
Edaphic, leaf litter. April, June, July (CPB, CPMG, CPMa, CGA).
Brachypterous.

10. ***Ardistomis* sp. 3**

Edaphic, leaf litter. June 2005, C. Tapia (QCAZ).
Probably a new species, with reduced eyes as *A. allegroi*, but different in color and elytra striation.
Brachypterous.

11. ***Semiardistomis* sp. 1**

(Fig. 9)

Riparian. July (CGA).
Fully winged.
Remarks: Probably related to *Semiardistomis exspectatus* Valdés, 2012.

12. ***Schizogenius* sp. 1**

(Fig. 10)

Riparian. July, December (CPMo, QCAZ, CGA).
Fully winged.

TRECHINAE Bonelli, 1810

BEMBIDARENINI Maddison *et al*., 2019

13. ***Andinodontis muellermotzfeldi*** Toledano & Erwin, 2010

(Fig. 11)

Type series includes Otonga.
Riparian. May (CPMo, CLT).
Other provinces: Napo, Sucumbíos, Pichincha (Erwin *et al*., 2010).
Brachypterous or fully winged.

BEMBIDIINI Stephens, 1827

14. ***Bembidion* (*Antiperyphanes*) *caoduroi*** Toledano, 2008

(Fig. 12)

Type series includes Otonga.
Riparian. July, December (MSNV, QCAZ).
Other provinces: Loja, Azuay, Chimborazo, Pichincha (Toledano, 2018).
Fully winged.
Remarks: part of the type series of *B. caoduroi* has been reassigned by Toledano (2018) to *B. angulicolle* (Putzeys, 1878). However, the Otonga population still belongs to *B. caoduroi.*

15. ***Bembidion* (*Ecuadion*) *agonoides*** Vigna & Toledano, 2008

(Fig. 13)

Type series includes Otonga.
Riparian, occasionally attracted by light. May, June (CAVT, CLT, QCAZ).
Other provinces: Napo, Sucumbíos (Vigna & Toledano, 2008).
Fully winged.

16. ***Bembidion* (*Ecuadion*) *walterrossii*** Toledano, 2008

(Fig. 14)

Type locality.
Riparian. July, August, December (CPMG, CLT, QCAZ, CAVT).
Other provinces: El Oro, Sucumbíos (Toledano 2008).
Brachypterous or fully winged.

17. ***Bembidion* (*Ecuadion*) sp. 3**, new species

Edaphic. July (QCAZ).
Brachypterous.

18. ***Erwiniana* sp. 1**

(Fig. 15)

Arboreal, mossy branches. July (QCAZ, CGA).
Brachypterous.

19. ***Erwiniana* sp. 2**

Habitat unknown. August (QCAZ).
Brachypterous.

20. ***Mioptachys* sp. 1**

(Fig. 16)

Edaphic, leaf litter. May, July (CGA).
Fully winged.

PAUSSINAE Latreille, 1806

OZAENINI Hope, 1838

21. ***Filicerozaena seriepunctata tapiai*** Deuve, 2024

(Fig. 17)

Type locality.
Edaphic, leaf litter. March, April, May, July, December (MNHN, CPM).

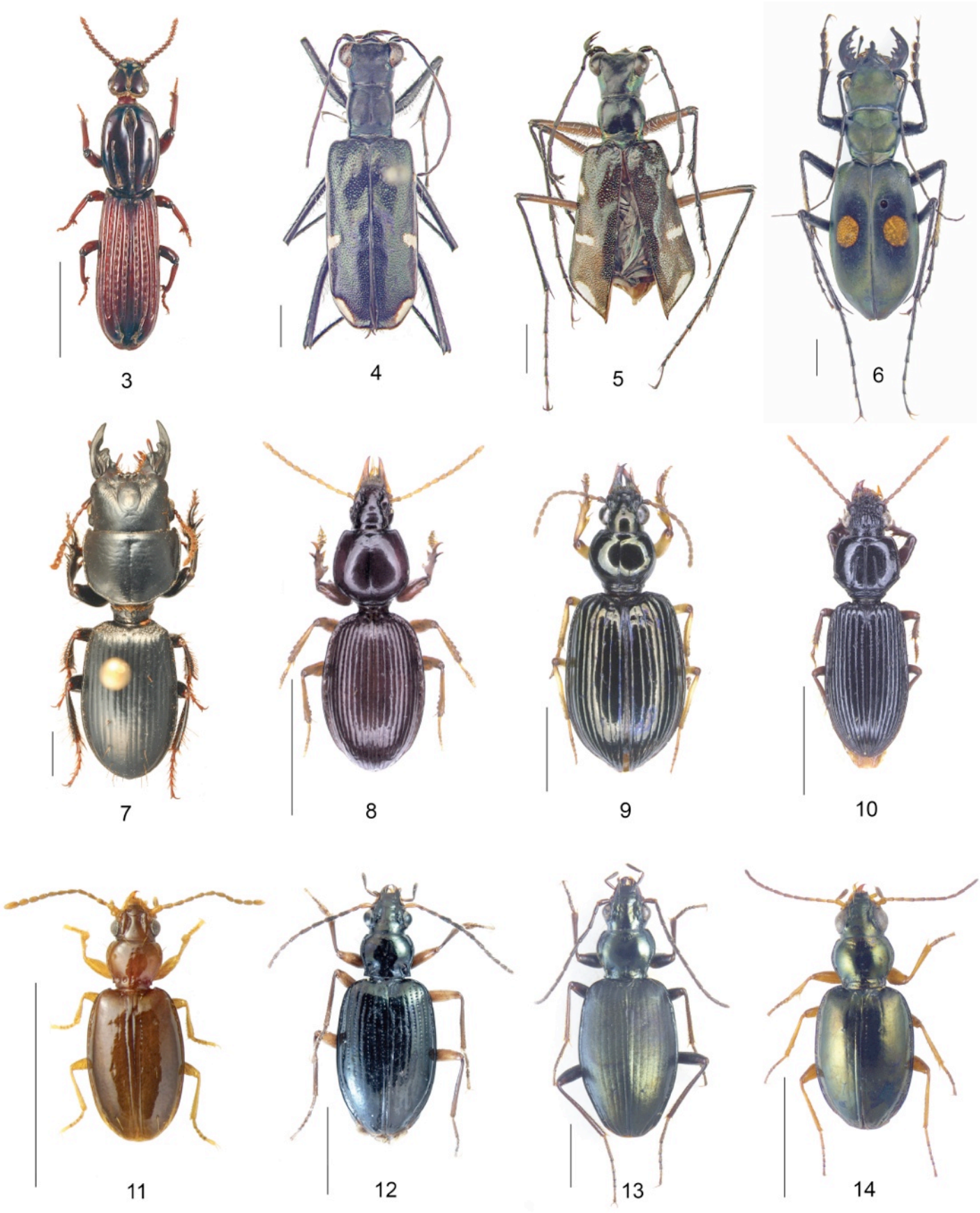

Fig. **3**-**14**. Habitus (scale bars: 2 mm).

3. *Clinidium insigne* Grouvelle, 1903. **4**. *Oxygonia oberthueri* W. Horn, 1896 (adapted from Moravec 2017 and 2020). **5**. *Oxygonia onorei* Cassola & Kippenhan, 1997 (adapted from Moravec 2017 and 2020). **6**. *Pseudoxycheila chaudoiri* Dokhtouroff, 1882. **7**. *Taeniolobus ecuadorensis* (Bänninger, 1941). **8**. *Ardistomis allegroi* Bulirsch & Magrini, 2024. **9**. *Semiardistomis* sp. **10**. *Schizogenius* sp. **11**. *Andinodontis muellermotzfeldi* Toledano & Erwin, 2010 (photo D.R. Maddison). **12**. *Bembidion caoduroi* Toledano, 2008 (photo L. Toledano). **13**. *Bembidion agonoides* Vigna & Toledano, 2008. **14**. *Bembidion walterrossii* Toledano, 2008.

Other province: Pichincha (Deuve, 2024).
Fully winged.
Remarks: This taxon was first mentioned as a species, but not described, in Moore (2008). It has been eventually described as a subspecies of *Filicerozaena seriepunctata* (Chaudoir, 1868).

22. ***Goniotropis claritarsalis*** Deuve, 2005
(Fig. 18)

Type locality.
Edaphic. April (MNHN).
Fully winged.

23. ***Goniotropis cotopaxiensis*** Deuve, 2005

Type locality.
Edaphic. July (MNHN).
Other province: Pichincha (CAVT).
Fully winged.

24. ***Pachyteles digiulioi*** Deuve, 2000
(Fig. 19)

Type locality.
Edaphic, active by night both on bare ground and on leaf litter. The larva dugs burrows in clayey banks in the ecotone between streams and forest (Di Giulio & Vigna-Taglianti, 2001). June, July (CAVT, CPMo, CGA).
The defensive and predatorial behavior of the larva of *P. digiulioi* Deuve, 2000 has been observed in the field and on reared specimens in laboratory (Di Giulio & Vigna-Taglianti, 2001).
Brachypterous.

HARPALINAE Bonelli, 1810

MORIONINI Brullé, 1835

25. ***Moriosomus loebli*** Allegro, Giachino & Picciau, 2018
(Fig. 20)

Type locality.
Dead wood, under barks. May, July, November, December (CAVT, CGA, CAC, CPMG, CLP, CPMo, QCAZ).
Other provinces: Santo Domingo, Sucumbíos, Pichincha, Cañar (Allegro *et al*., 2018; QCAZ).
Brachypterous.

ABACETINI Chaudoir, 1873

26. ***Oxycrepis*** (***Loxandrus***) **sp**. **1**
(Fig. 21)

Edaphic (pitfall trap). June (CGA).
Fully winged.
Remarks: The New World Loxandrina formerly assigned to *Loxandrus* LeConte, 1853 have been moved to *Oxycrepis* Reiche, 1843, based on a molecular analysis (Will, 2020).

27. ***Oxycrepis*** (***Loxandrus***) **sp**. **2**

Habitat unknown. May (QCAZ).
Fully winged.

PTEROSTICHINI Bonelli, 1810

28. ***Hybothecus aequidianus*** (Moret, 1996)
(Fig. 22)

Edaphic, also riparian or in dead wood. May, August, November, December (CAVT, CPMo, QCAZ).
Other provinces: Sucumbíos, Pichincha, Napo, Zamora-Chinchipe.
Fully winged.

HARPALINI Bonelli, 1810

29. ***Notiobia*** (***Notiobia***) **sp**. **1**
(Fig. 23)

Edaphic. June, July, August (QCAZ, CGA).
Fully winged.

30. ***Notiobia*** (***Notiobia***) **sp**. **2**
(Fig. 24)

Edaphic. June, July (CPMo, CGA).
Fully winged.

31. **Genus** cf. ***Notiobia*** **sp**. **1**, new species
(Fig. 25)

Rotten log. July (CPMo).
Brachypterous.

32. ***Pelmatellus*** **sp**. **1**, new species
(Fig. 26)

Edaphic. August (QCAZ).
Other province: Pichincha (CPMo).
Brachypterous.

33. ***Selenophorus*** **sp**. **1**
(Fig. 27)

Edaphic, July, August (CGA, QCAZ).
Fully winged.

34. ***Selenophorus*** **sp**. **2**
(Fig. 28)

Edaphic. July (CGA).
Fully winged.

35. ***Selenophorus*** **sp**. **3**
(Fig. 29)

Edaphic. July (CGA).
Fully winged.

PLATYNINI Bonelli, 1810

36. ***Dyscolus*** (***Dyscolidion***) ***cyanonotus*** Chaudoir, 1850
(Fig. 30)

New record for Ecuador.
Habitat unknown. May (CPMo).
Other country: Colombia.
Fully winged.

37. ***Dyscolus*** (***Dyscolidion***) ***imitator*** Moret, 1990
(Fig. 31)

Riparian. July (CPMo, CPMG, CGA).
Other provinces: Esmeraldas, Pichincha, Santo Domingo, Bolívar.
Fully winged.

38. ***Dyscolus*** (***Dyscolus***) ***aequinoctialis*** Chaudoir, 1850
(Fig. 32)

Riparian. May, July, August, December (CAVT, CPMo, QCAZ).
Other provinces: Imbabura, Pichincha, Sucumbíos, Napo, Chimborazo, Tungurahua, Azuay, Loja, Zamora-Chinchipe (Moret, 2024).
Other countries: Colombia, Peru.
Fully winged.

39. ***Dyscolus*** (***Dyscolus***) ***antoninus*** Moret, 1991
(Fig. 35)

Habitat unknown. January, August (QCAZ, CPMo).
Other provinces: Pichincha, Bolívar.

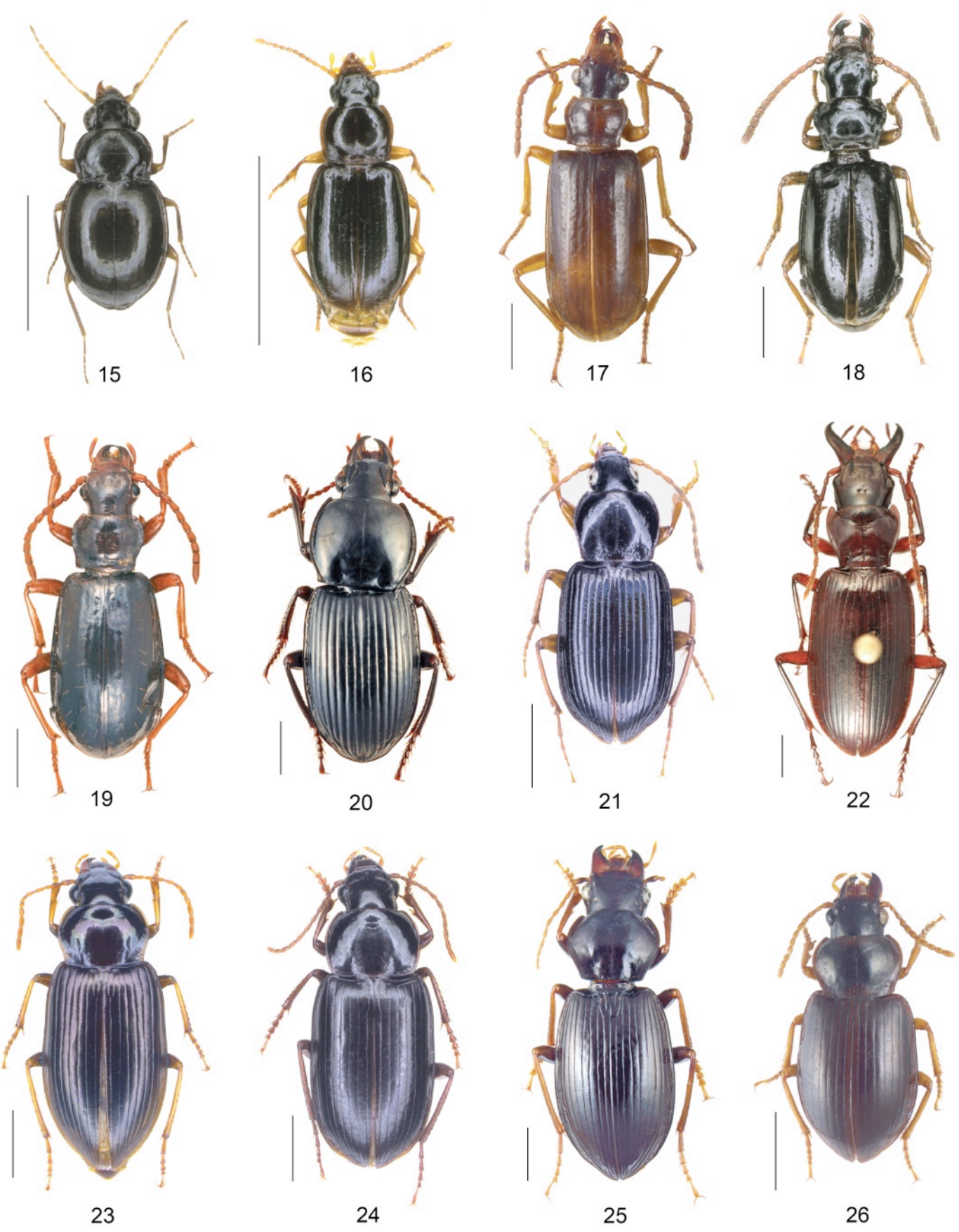

Fig. **15-26**. Habitus (scale bars: 2 mm).

15. *Erwiniana* sp. **16**. *Mioptachys* sp. **17**. *Filicerozaena seriepunctata tapiai* Deuve, 2024. **18**. *Goniotropis claritarsalis* Deuve, 2005. **19**. *Pachyteles digiulioi* Deuve, 2000. **20**. *Moriosomus loebli* Allegro, Giachino & Picciau, 2018. **21**. *Oxycrepis* sp. **22**. *Hybothecus aequidianus* (Moret, 1996). **23**. *Notiobia* sp. 1. **24**. *Notiobia* sp. 2. **25**. *Cf. Notiobia* sp. **26**. *Pelmatellus* sp.

Fully winged.

40. ***Dyscolus*** (***Dyscolus***) ***asphaltinus*** (Chaudoir, 1878)

(Fig. 41)

Riparian. May, July (QCAZ, CPMo).
Other province: Pichincha (QCAZ, CPMo).
Other country: Colombia (Arenas-Clavijo *et al*., 2022).
Brachypterous.

41. ***Dyscolus*** (***Dyscolus***) ***eleonorae*** Moret, 2020

(Fig. 36)

Type locality.
Arboreal. January, May, July, August, September, October, November (QCAZ, CPMo, CPMG).
Other provinces: Pichincha, Santo Domingo, El Oro (Moret, 2020).
Fully winged.

42. ***Dyscolus*** (***Dyscolus***) ***fabrefactus*** Moret, 2024

(Fig. 40)

Type series includes Otonga.
Riparian. January, July, November (QCAZ, CPMo).
Other provinces: Pichincha, Chimborazo (Moret 2024).
Brachypterous.

43. ***Dyscolus*** (***Dyscolus***) ***giselae*** Moret, 2020

(Fig. 37)

Type locality.
Riparian. January, May, July, August (QCAZ, CPMo, CPMG).
Brachypterous.

44. ***Dyscolus*** (***Dyscolus***) ***liebherri*** Moret, 2024

(Fig. 38)

Type locality.
Arboreal. July, October, December (QCAZ, CPMo, CPMG).
Other province: Pichincha (Moret, 2024).
Fully winged.

45. ***Dyscolus*** (***Dyscolus***) ***osseus*** Moret, 2024

(Fig. 42)

Type locality.
Riparian. May, July, December (QCAZ, CPMo, CGA).
Other province: Pichincha (Moret, 2024).
Brachypterous.

46. ***Dyscolus*** (***Dyscolus***) ***purpuratus*** Reiche, 1842

(Fig. 33)

Riparian, occasionally arboreal in epiphytes. April, May, July, August, September (QCAZ, CPMo).
Other provinces: Carchi, Sucumbíos, Pichincha, Napo, Tungurahua, Loja, Zamora-Chinchipe.
Other countries: Colombia, Peru, Bolivia, Venezuela, Guatemala, Costa Rica, Panama, Mexico.
Fully winged.

47. ***Dyscolus*** (***Dyscolus***) ***rivinus*** Moret, 2020

Type locality.
Riparian. July (QCAZ, CPMo).
Brachypterous.

48. ***Dyscolus*** (***Dyscolus***) ***spinicauda*** Moret, 2024

(Fig. 39)

Type locality.
Probably arboreal. February (QCAZ).
Other province: Sucumbíos (Moret, 2024).
Fully winged.

49. ***Dyscolus*** (***Dyscolus***) ***variegatus*** Moret, 2024

(Fig. 34)

Type locality.
Probably arboreal. May (QCAZ).
Fully winged.

50. ***Dyscolus*** (***Dyscolus***) **sp**. **15**, new species

Habitat unknown, most probably edaphic. June (CPMG).
Brachypterous.

51. ***Dyscolus*** (***Glyptolenopsis***) ***aeneipennis*** (Dejean, 1831)

(Fig. 43)

Habitat unknown. October (MZLS).
Other provinces: Manabí, Pichincha.
Other countries: Colombia, Venezuela, Panama, Costa Rica.
Fully winged.

52. ***Dyscolus*** (***Scaphiodactylus***) ***atratus*** (Chaudoir, 1859)

(Fig. 44)

Riparian. February (MZLS).
Other provinces: Imbabura, Pichincha, Tungurahua, Chimborazo, Bolívar, Loja.
Other countries: Colombia, Venezuela, Guatemala, Costa Rica, Mexico.
Fully winged.

53. ***Glyptolenoides azureus*** (Chaudoir, 1859)

(Fig. 45)

Riparian. July, August, December (QCAZ, CPMo).
Other provinces: Carchi, Sucumbíos, Imbabura, Pichincha, Napo, Tungurahua, Bolívar, Cañar, Chimborazo, Azuay, Loja, Zamora-Chinchipe.
Other countries: Bolivia, Peru, Colombia, Venezuela.
Fully winged.

54. ***Glyptolenoides formicarius*** Moret, 2024

(Fig. 46)

Type series includes Otonga.
Edaphic, leaf litter. June, July, August (QCAZ, CPMG, CGA).
Other province: Pichincha.
Brachypterous.

55. ***Glyptolenus apicestriatus*** (Reiche, 1843)

(Fig. 47)

Edaphic, occasionally riparian. July (QCAZ, CPMo).
Other provinces: Pichincha, Sucumbíos, Carchi, Zamora-Chinchipe.
Other country: Colombia.
Fully winged.

56. ***Glyptolenus arboricola*** Moret, 2024

(Fig. 53)

Type locality.
Arboreal, in mosses and epiphytes. June, July, September, October (QCAZ, CPMG, CPMo, CGA, CLP).
Other province: Pichincha.
Brachypterous.

57. ***Glyptolenus calvus*** Moret, 2024

(Fig. 51)

Type locality.
Habitat unknown. July (QCAZ).
Other province: Manabí.
Brachypterous.

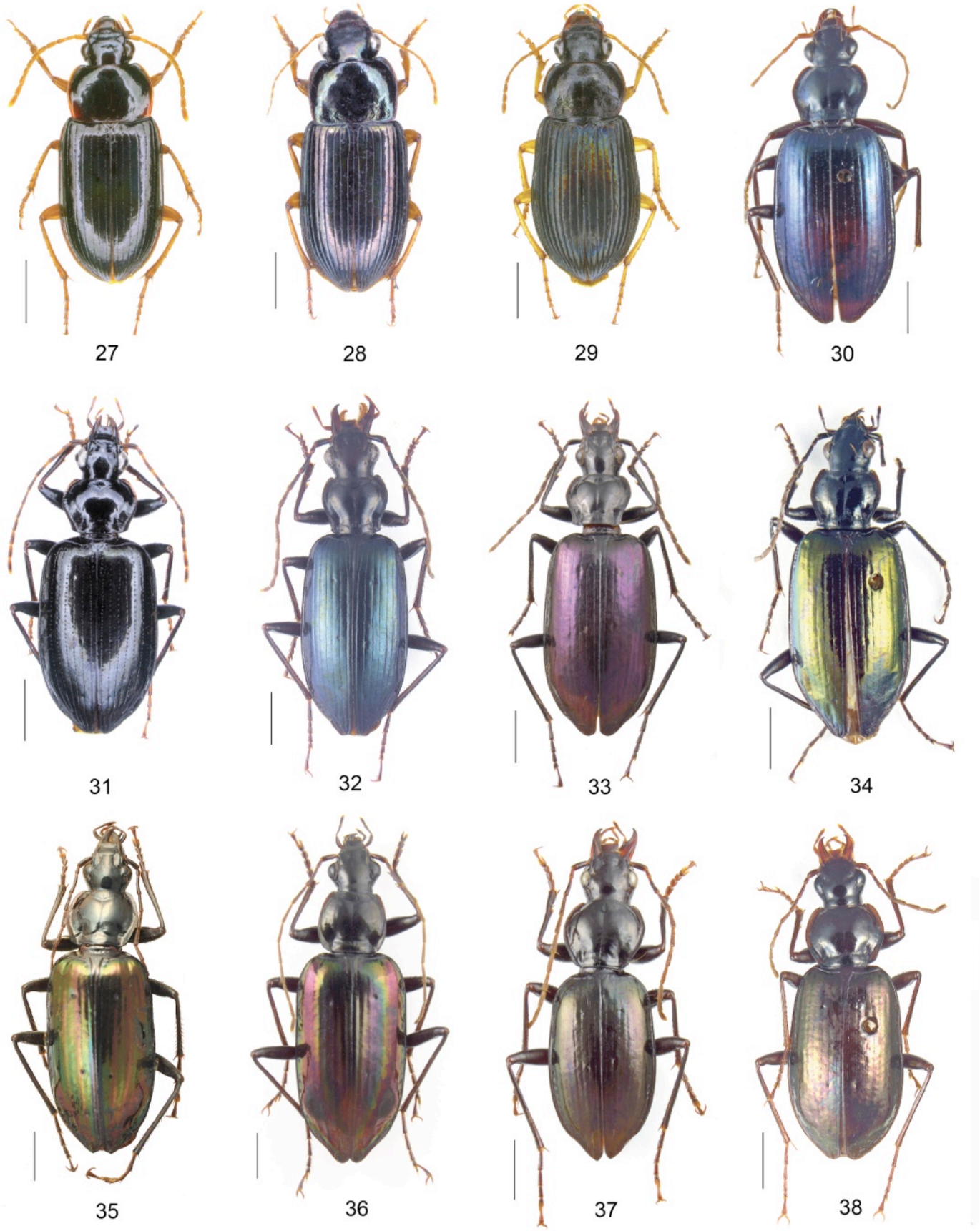

Fig. **27-38**. Habitus (scale bars: 2 mm).

27. *Selenophorus* sp. 1. **28**. *Selenophorus* sp. 2. **29**. *Selenophorus* sp. 3. **30**. *Dyscolus* (*Dyscolidion*) *cyanonotus* Chaudoir, 1850. **31**. *Dyscolus* (*Dyscolidion*) *imitator* Moret, 1990. **32**. *Dyscolus* (*s. str.*) *aequinoctialis* Chaudoir, 1850. **33**. *Dyscolus* (*s. str.*) *purpuratus* Reiche, 1842. **34**. *Dyscolus* (*s. str.*) *variegatus* Moret, 2024. **35**. *Dyscolus* (*s. str.*) *antoninus* Moret, 1991. **36**. *Dyscolus* (*s. str.*) *eleonorae* Moret, 2020. **37**. *Dyscolus* (*s. str.*) *giselae* Moret, 2020. **38**. *Dyscolus* (*s. str.*) *liebherri* Moret, 2024.

58. ***Glyptolenus cyclothorax*** (Chaudoir, 1878)

(Fig. 48)

Arboreal (mosses on branches), occasionally riparian. February, July, September, December (QCAZ, CPMo).
Other provinces: Carchi, Sucumbíos, Napo, Pichincha.
Other country: Colombia.
Fully winged.

59. ***Glyptolenus hector*** Moret, 2024

(Fig. 52)

Type series includes Otonga.
Edaphic and arboreal, in rotten logs and in epiphytes. February, July (QCAZ, CPMo, CGA, MZUF).
Other provinces: Pichincha, Imbabura.
Brachypterous.

60. ***Glyptolenus humicola*** Moret, 2024

(Fig. 54)

Type series includes Otonga.
Predominantly edaphic in leaf litter, secondarily arboreal on mossy branches. April, May, June, July, September, October (QCAZ, CPMG, CPMo, CGA).
Other province: Pichincha.
Brachypterous.

61. ***Glyptolenus resbecqi*** Moret, 2024

(Fig. 55)

Type locality.
Edaphic in leaf litter and above ground in mosses and epiphytes. June, July (QCAZ, CPMG, CPMo, CGA).
Brachypterous.

62. ***Glyptolenus rugicollis*** Bates, 1878

(Fig. 50)

Habitat unknown. August (QCAZ, CPMo).
Other provinces: Napo, Pichincha, Zamora-Chinchipe.
Other countries: Costa Rica, Nicaragua, Panama.
Fully winged.

63. ***Glyptolenus* sp. 9**, new species

(Fig. 49)

Habitat unknown. May, July, October, December (QCAZ, CPMo).
Fully winged.

64. ***Glyptolenus* sp. 10**, new species

Arboreal, mossy branches. June, July, October, December (QCAZ, CPMG, CPMo, CGA).
Fully winged.

65. ***Glyptolenus* sp. 11**, new species

Arboreal, mossy branches. June, July, September, October (QCAZ, CPMG, CPMo).
Fully winged.

66. ***Glyptolenus* sp. 12**, new species

Edaphic, leaf litter. February, April, June, July (QCAZ, CPMG, CPMo, CGA).
Brachypterous.

67. ***Incagonum aeneum*** (Reiche, 1843)

(Fig. 56)

Riparian. Very common, year-round (CAVT, CPMo, CPMG, CWR, QCAZ).
Other provinces: Sucumbíos, Carchi, Imbabura, Pichincha, Napo, Tungurahua, Bolívar, Cañar, Morona-Santiago, Azuay, Loja, Zamora-Chinchipe.
Other countries: Colombia, Peru.
Fully winged.

PERIGONINI Horn, 1881

68. ***Diploharpus curtulus*** Moret, 2008

Type locality.
Dead wood, under barks. February, July, August (MNHN, CPMo, CPMG, CGA, CWR, QCAZ).
Fully winged.

69. ***Diploharpus iridescens*** Moret, 2008

(Fig. 57)

Type locality.
Dead wood, under barks. July (CPMo, MNHN).
Fully winged.

70. ***Diploharpus rossii*** Moret, 2008

(Fig. 58)

Type locality.
Dead wood, under barks; edaphic, in leaf litter. May, July, December (MNHN, CPMG, CGA, CWR, CPMo, QCAZ).
Other province: Pichincha.
Fully winged.

71. ***Perigona* sp. 1**

Edaphic, leaf litter; dead wood, rotten log. May, July, August, November (CPMo, CPMG, QCAZ).
Fully winged.

72. ***Perigona* sp. 2**

Edaphic, litter in riparian context. July (CPMo).
Fully winged.

73. ***Perigona* sp. 3**

(Fig. 59)

Arboreal, mossy branches. July (CPMo, CPMG, CGA).
Fully winged.

74. ***Perigona* sp. 4**

(Fig. 60)

Edaphic, leaf litter. January, May, July, August (CPMo, QCAZ, CGA).
Fully winged.

LACHNOPHORINI LeConte, 1853

75. ***Anchonoderus cyanescens*** (Putzeys, 1878)

New record for Ecuador.
Riparian. July (CGA, CPMo, QCAZ).
Other country: Colombia.
Fully winged.

76. ***Anchonoderus myops*** Reiche, 1843

(Fig. 61)

New record for Ecuador.
Riparian. May (QCAZ).
Other provinces: El Oro, Sucumbíos.
Other countries: Colombia, Panama.
Fully winged.

77. ***Anchonoderus* sp. 3**

(Fig. 62)

Riparian. July (CPMo).
Fully winged.

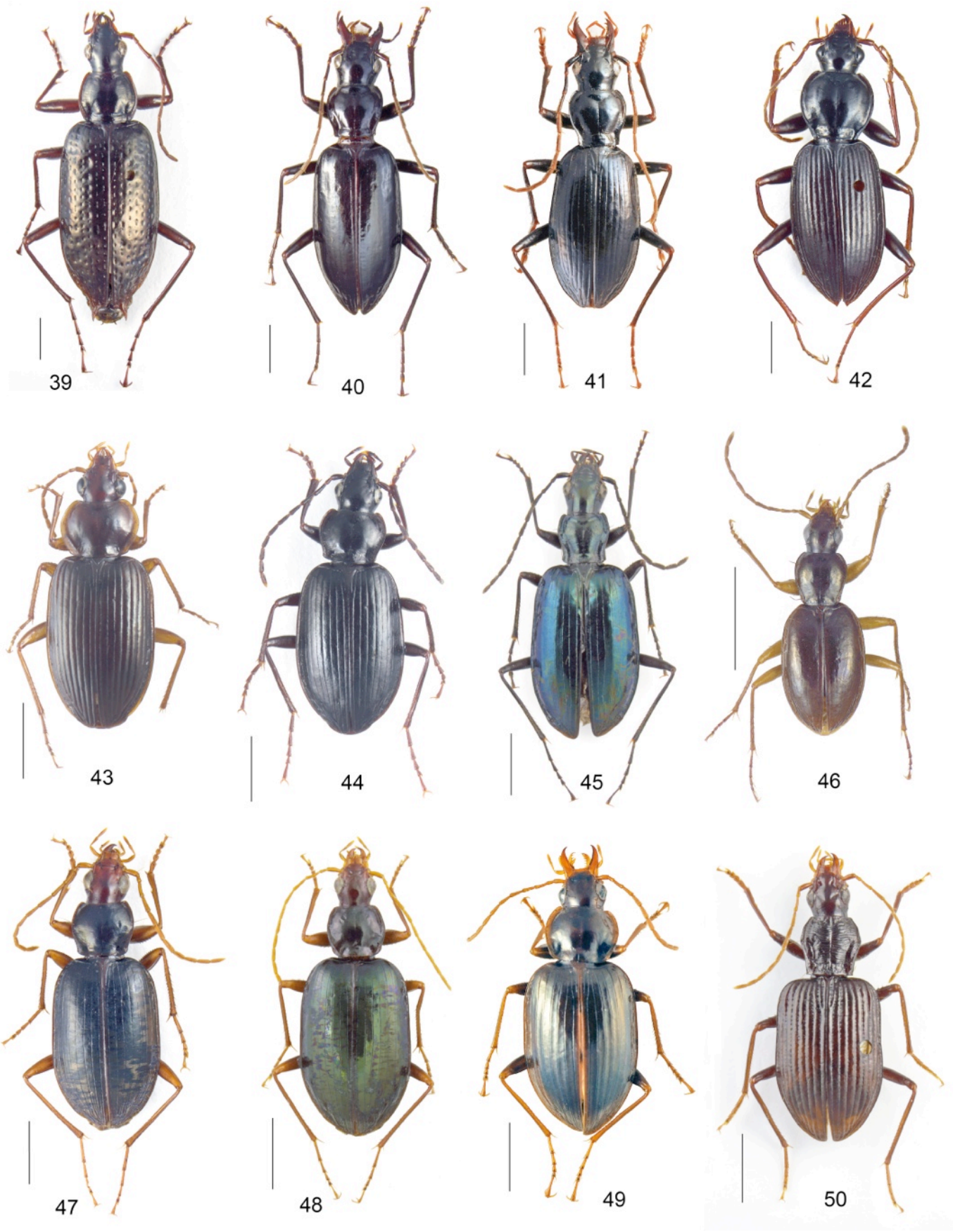

Fig. **39**-**50**. Habitus (scale bars: 2 mm).

39. *Dyscolus* (*s. str.*) *spinicauda* Moret, 2024. **40**. *Dyscolus* (*s. str.*) *fabrefactus* Moret, 2024. **41**. *Dyscolus* (*s. str.*) *asphaltinus* (Chaudoir, 1878). **42**. *Dyscolus* (*s. str.*) *osseus* Moret, 2024. **43**. *Dyscolus* (*Glyptolenopsis*) *aeneipennis* (Dejean, 1831). **44**. *Dyscolus* (*Scaphiodactylus*) *atratus* (Chaudoir, 1859). **45**. *Glyptolenoides azureus* (Chaudoir, 1859). **46**. *Glyptolenoides formicarius* Moret, 2024. **47**. *Glyptolenus apicestriatus* (Reiche, 1843). **48**. *Glyptolenus cyclothorax* (Chaudoir, 1878). **49**. *Glyptolenus* sp. 9. **50**. *Glyptolenus rugicollis* Bates, 1878.

78. ***Balligratus humerangulus*** Moret & Ortuño, 2017

(Fig. 63)

Type locality.
Edaphic, leaf litter. July, August (MNHN, CPMo, CGA, CVO, NMNH, CPMG, CWR).
Other province: Pichincha (Moret & Ortuño, 2017).
Brachypterous.

79. ***Eucaerus* sp. 1**

(Fig. 64)

Habitat unknown. April, May (CGA).
Brachypterous.

80. ***Guatemalteca* sp. 1**, new species

(Fig. 65)

Habitat unknown. July (CGA, CPMG).
Fully winged.
Remarks: Close to *Guatemalteca virgen* Erwin, 2004, but the antennae are much longer.

81. ***Peruphorticus pallipes*** (Reiche, 1843)

(Fig. 66)

New record for Ecuador.
Riparian, Edaphic. July, August (CPMo, QCAZ).
Other province: Sucumbíos.
Other country: Colombia.
Fully winged.

82. ***Peruphorticus* sp. 2**

Riparian, Edaphic. July (CPMo, CPMG).
Fully winged.

PENTAGONICINI Bates, 1873

83. ***Pentagonica* sp. 1**

(Fig. 67)

Edaphic, leaf litter. May, June, July (QCAZ, CGA).
Fully winged.

ODACANTHINI Laporte, 1834

84. ***Colliuris* (*Apiodera*) sp. 1**

(Fig. 68)

Habitat unknown, probably arboreal. February (QCAZ).
Fully winged.

CTENODACTYLINI Laporte, 1834

85. **New genus**, **new species**

(Fig. 69)

Arboreal. January, February, May, June, July, August, November (QCAZ, CGA, CPMo).
Other provinces: Pichincha, Bolívar.
Fully winged.
Remarks: Genus related to *Leptotrachelus*, description in process. This new genus includes several species from Ecuador and Colombia.

LEBIINI Bonelli, 1810

86. ***Apenes* sp. 1**

(Fig. 70)

Habitat unknown. July (QCAZ).
Fully winged.

87. ***Calleida moreti*** Casale, 2008

(Fig. 71)

Type series includes Otonga.
Arboreal. July, December (QCAZ, CAC, CPMG, CPMo).
Other provinces: Santo Domingo, Pichincha, Imbabura (Casale, 2008).
Fully winged.

88. ***Calleida onorei*** Casale, 2008

(Fig. 72)

Type locality.
Arboreal. March, May (QCAZ).
Other provinces: Santo Domingo, Pichincha (Casale, 2008).
Fully winged.

89. ***Lebia (Chelonodema) ocelligera*** Bates, 1883

(Fig. 73)

Arboreal. August (QCAZ).
Other countries: Brazil, Colombia, Costa Rica, Guatemala, Mexico.
Fully winged.

90. ***Lebia* sp. 2**

(Fig. 74)

Arboreal. July (CGA).
Fully winged.

91. ***Lebia* sp. 3**

Arboreal. May, October (QCAZ).
Fully winged.

92. ***Lebia* sp. 4**

(Fig. 75)

Arboreal. June, July (CGA).
Fully winged.

93. ***Lebia* sp. 5**

(Fig. 76)

Arboreal. July, September (QCAZ, CGA).
Fully winged.

94. ***Lebia* sp. 6**

Arboreal. July, December (QCAZ, CGA).
Fully winged.

95. ***Lebia* sp. 7**

(Fig. 77)

Arboreal. April, June, July (QCAZ, CGA).
Fully winged.

96. ***Lebia* sp. 8**

(Fig. 78)

Arboreal. March (QCAZ).
Fully winged.

97. ***Lebia* sp. 9**

(Fig. 79)

Arboreal. July (CGA).
Fully winged.

98. ***Lebia* sp. 10**

(Fig. 80)

Arboreal. April, July (QCAZ).
Fully winged.

99. ***Lelis* sp. 1**, new species

(Fig. 81)

Arboreal. July, August (CPMo, CPMG).
Fully winged.

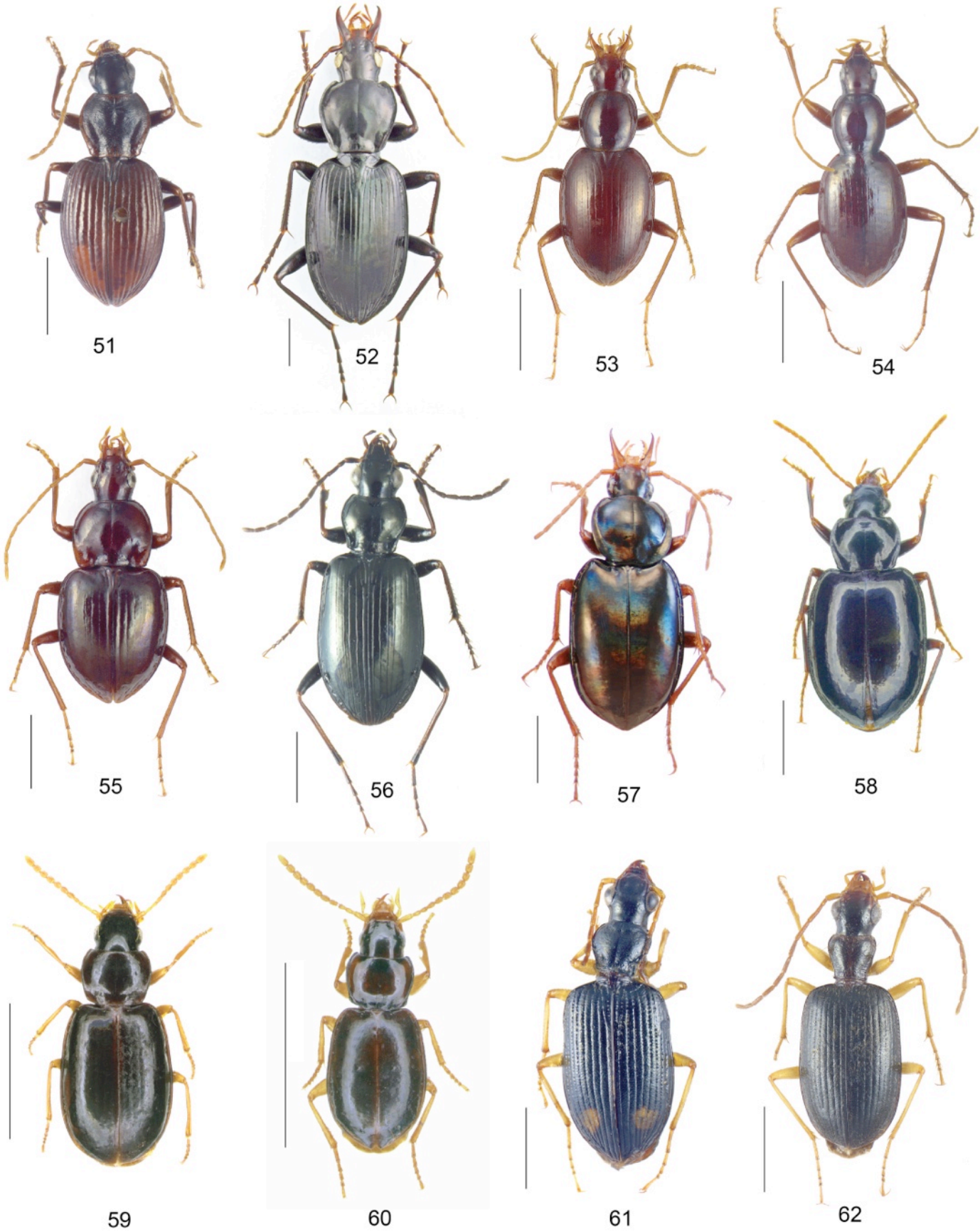

Fig. **51**-**62**. Habitus (scale bars: 2 mm).

51. *Glyptolenus calvus* Moret, 2024. **52**. *Glyptolenus hector* Moret, 2024. **53**. *Glyptolenus arboricola* Moret, 2024. **54**. *Glyptolenus humicola* Moret, 2024. **55**. *Glyptolenus resbecqi* Moret, 2024. **56**. *Incagonum aeneum* (Reiche, 1843). **57**. *Diploharpus iridescens* Moret, 2008. **58**. *Diploharpus rossii* Moret, 2008. **59**. *Perigona* sp. 3. **60**. *Perigona* sp. 4. **61**. *Anchonoderus myops* Reiche, 1843. **62**. *Anchonoderus* sp. 3.

Remarks: New species close to *Lelis rutila* (Bates, 1869).

100. ***Onota* sp. 1**

Arboreal. July (QCAZ).
Fully winged.

101. ***Plochionus* sp. 1**

Arboreal. November (QCAZ).
Fully winged.

102. ***Stenognathus* (*Prostenognathus*) *onorei*** Shpeley & Ball, 2000
(Fig. 83)

Edaphic, in leaf litter and under logs. May, July, August, September, October (QCAZ, CPMo, CGA).
Other provinces: Pichincha, Napo, Imbabura, Bolívar (Shpeley & Ball, 2000).
Brachypterous.

103. ***Stenognathus* (*Stenognathus*) *batesi*** Chaudoir, 1877
(Fig. 82)

Dead wood, on logs by night and under loose bark. April, May, July, November (CUIC, QCAZ, Shpeley & Ball 2000).
Other provinces: Napo, Pichincha.
Other countries: Costa Rica, Panamá (Shpeley & Ball, 2000).
Fully winged.

104. ***Stenognathus* (*Stenognathus*) *procerus*** (Putzeys, 1878)
(Fig. 84)

New record for Ecuador.
Dead wood, on logs by night and under loose bark. July (QCAZ, CPMG).
Other province: Pichincha.
Other country: Colombia (Shpeley & Ball, 2000).
Fully winged.

105. ***Stenognathus* (*Stenognathus*) *stricticollis*** (Maindron, 1906)
(Fig. 85)

Dead wood, on logs by night and under loose bark. April (CUIC, Shpeley & Ball 2000).
Other provinces: Pichincha, Napo, Morona-Santiago, Pastaza.
Other countries: Brazil, Peru, Venezuela (Shpeley & Ball, 2000).
Fully winged.

106. ***Stenognathus* sp. 5**

Habitat unknown. October (QCAZ).
Fully winged.

ZUPHIINI Bonelli, 1810

107. ***Pseudaptinus* (*Thalpius*) sp. 1**
(Fig. 86)

Edaphic (pitfall trap). July (CGA).
Brachypterous.

Discussion

The provisional number of recorded species is 107, distributed in 43 genera and 20 tribes. Among them, 33 species were described from type material wholly or partly collected in the Otonga reserve, and 9 species are only known so far from Otonga: *Ardistomis allegroi* Bulirsch & Magrini, 2024, *Diploharpus curtulus* Moret, 2008, *Diploharpus iridescens* Moret, 2008, *Dyscolus giselae* Moret, 2020, *Dyscolus rivinus* Moret, 2020, *Dyscolus variegatus* Moret, 2024, *Glyptolenus resbecqi* Moret, 2024, *Goniotropis claritarsalis* Deuve, 2005, and *Pachyteles digiulioi* Deuve, 2000. The checklist includes 2 new genus records for Ecuador: *Guatemalteca* and *Plochionus*, and 5 new species records for Ecuador: *Anchonoderus cyanescens* (Putzeys, 1878), *Anchonoderus myops* Reiche, 1843, *Peruphorticus pallipes* (Reiche, 1843), *Dyscolus (Dyscolidion) cyanonotus* Chaudoir, 1850, and *Stenognathus (Stenognathus) procerus* (Putzeys, 1878).
These figures rank Otonga among the best surveyed nature reserves in the whole Neotropics, as far as carabids are concerned. It is worth underlining that these results were obtained in a very small area (approximately ten square km), to be compared to the *ca* 770 species so far described or mentioned in scientific publications from the whole territory of continental Ecuador (P.M., unpublished data), or to the 725 species recorded from Colombia (Arenas-Clavijo *et al*., 2022). The fact that the species collected in such a small forest area amount to 1/7 of the entire Ecuadorian fauna (based on published data) reveals that the current knowledge of carabid diversity in the tropical Andes, especially in the Chocó ecoregion, is still very low. The collection effort performed over thirty years at Otonga can only be compared with two Terry Erwin's survey programs, conducted at lower elevation at the foot of the Andes, on the Amazonian side: the first one in SE Peru, at Parque Nacional del Manu (11°56'40"S, 71°16'55"W, 340–380 m a.s.l.), where collections made during 17 man-weeks yielded 26 tribes, 118 genera, and 569 morphospecies in an area of approximately 40 km^2 (Erwin, 1991); and a four-months survey in Eastern Ecuador at Tiputini Biodiversity Station (0°37'55"S, 76°08'39"W, 190-270 m a.s.l.), where 20 tribes, 54 genera, and 143 morphospecies were recorded (Riley Peterson *et al*., 2021).
That said, the level of knowledge of the carabid fauna of Otonga is still insufficient. Many species living in the Otonga forest are probably still unknown and awaiting discovery, so that this checklist must be viewed as a baseline for future research. Moreover, nearly half of the species (46 out of 107) could not be given a name, either because they are probably new to science, or because they could not be compared to type material in genera lacking recent revision. Eleven species belonging to well-studied genera (e.g., *Dyscolus*, *Glyptolenus*, *Pelmatellus*) are certainly new, but this figure only represents a fraction of the species to be described, especially in the tribe Lebiini.
The most species-rich tribe is Platynini, with 32 species (30%), followed by Lebiini with 21 (20%). The most species-rich genera are *Dyscolus* (17 species), *Glyptolenus* (12) and *Lebia* (10). Six genera (*Ardistomis*, *Bembidion*, *Selenophorus*, *Diploharpus*, *Perigona*, *Stenognathus*) are represented by 3 to 5 species, while the remaining 34 genera are monospecific or bispecific at Otonga.
Regarding the capability of flight, 29 species (27%) are brachypterous, i.e., unable to fly.
The available data only allowed us to determine the dstribution range of 60 species. Based on this, the Carabidae found at Otonga belong to four biogeographic areas (Graph 1).
Only 6 species (10%) have a wide distribution in the tropical northern Andes (northern Peru, Ecuador, Colombia and part of Venezuela) and in Mesoamerica. All of them are fully winged.
Ten species (17%) are endemic to the Northern Andes (mainly Ecuador and Colombia), all fully winged but one (*Clinidium insigne*), most of them riparian.
Seventeen species (28%) are endemic to the Chocó ecoregion in southern Colombia and NW Ecuador.
Twenty-seven (45%) are regional endemics, restricted to the pacific slope of the Cordillera in northern Ecuador. All the flightless species collected at Otonga but three belong to this regional endemic fauna. When distribution data are available, their latitudinal range along the Cordillera is under *ca*. 200 km south-north, in several cases under *ca*. 100 km.
All in all, 44 species (73%) are restricted to the western (pacific) slope of the Andes in Ecuador or to the West Andes in Colombia, without any record on the eastern (Amazonian) slope. This means

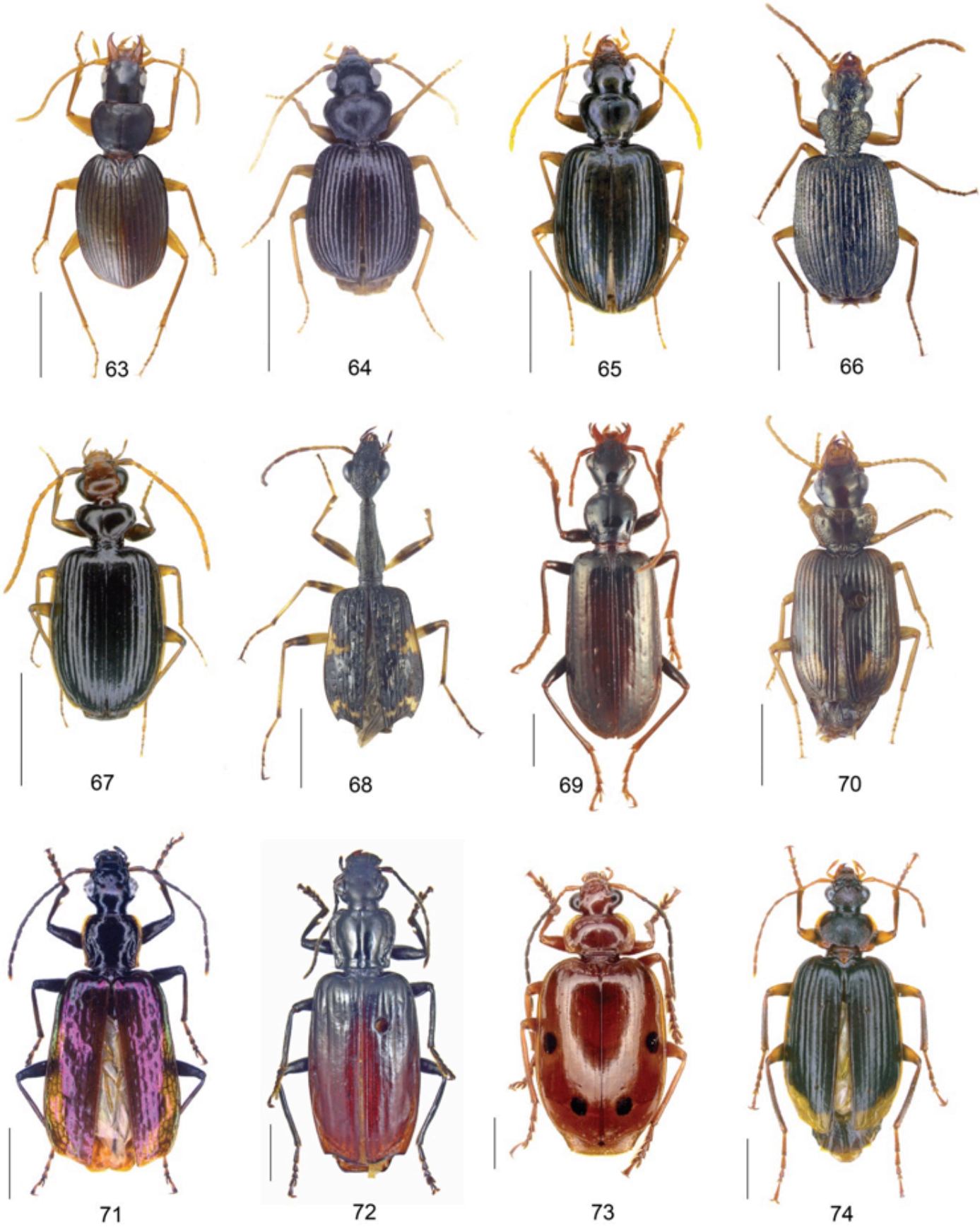

Fig. **63**-**74**. Habitus (scale bars: 2 mm).

63. *Balligratus humerangulus* Moret & Ortuño, 2017. **64**. *Eucaerus* sp. **65**. *Guatemalteca* sp. **66**. *Peruphorticus pallipes* (Reiche, 1843). **67**. *Pentagonica* sp. **68**. *Colliuris* (*Apiodera*) sp. **69**. New genus cf. *Leptotrachelus* sp. **70**. *Apenes* sp. **71**. *Calleida moreti* Casale, 2008. **72**. *Calleida onorei* Casale, 2008. **73**. *Lebia ocelligera* Bates, 1883. **74**. *Lebia* sp. 2.

Table 1. Subfamilies, tribes and genera of Carabidae recorded at Otonga.

Subfamily	Tribe	Genus	Spp.
Rhysodinae	Rhysodini	*Clinidium*	2
Cicindelinae	Cicindelini	*Oxygonia*	2
	Megacephalini	*Pseudoxycheila*	2
Scaritinae	Scaritini	*Taeniolobus*	1
	Clivinini	*Ardistomis*	3
		Semiardistomis	1
		Schizogenius	1
Trechinae	Bembidarenini	*Andinodontis*	1
	Bembidiini	*Bembidion*	4
		Erwiniana	2
		Mioptachys	1
Paussinae	Ozaenini	*Filicerozaena*	1
		Goniotropis	2
		Pachyteles	1
Harpalinae	Morionini	*Moriosomus*	1
	Abacetini	*Oxycrepis*	2
	Pterostichini	*Hybothecus*	1
	Harpalini	*Notiobia*	2
		Pelmatellus	1
		Selenophorus	3
		Cf *Notiobia*	1
	Platynini	*Dyscolus*	17
		Glyptolenoides	2
		Glyptolenus	12
		Incagonum	1
	Perigonini	*Diploharpus*	3
		Perigona	4
	Lachnophorini	*Anchonoderus*	3
		Balligratus	1
		Eucaerus	1
		Guatemalteca	1
		Peruphorticus	2
	Pentagonicini	*Pentagonica*	1
	Odacanthini	*Colliuris*	1
	Ctenodactylini	New genus	1
	Lebiini	*Apenes*	1
		Calleida	2
		Lebia	10
		Lelis	1
		Onota	1
		Plochionus	1
		Stenognathus	5
	Zuphiini	*Pseudaptinus*	1

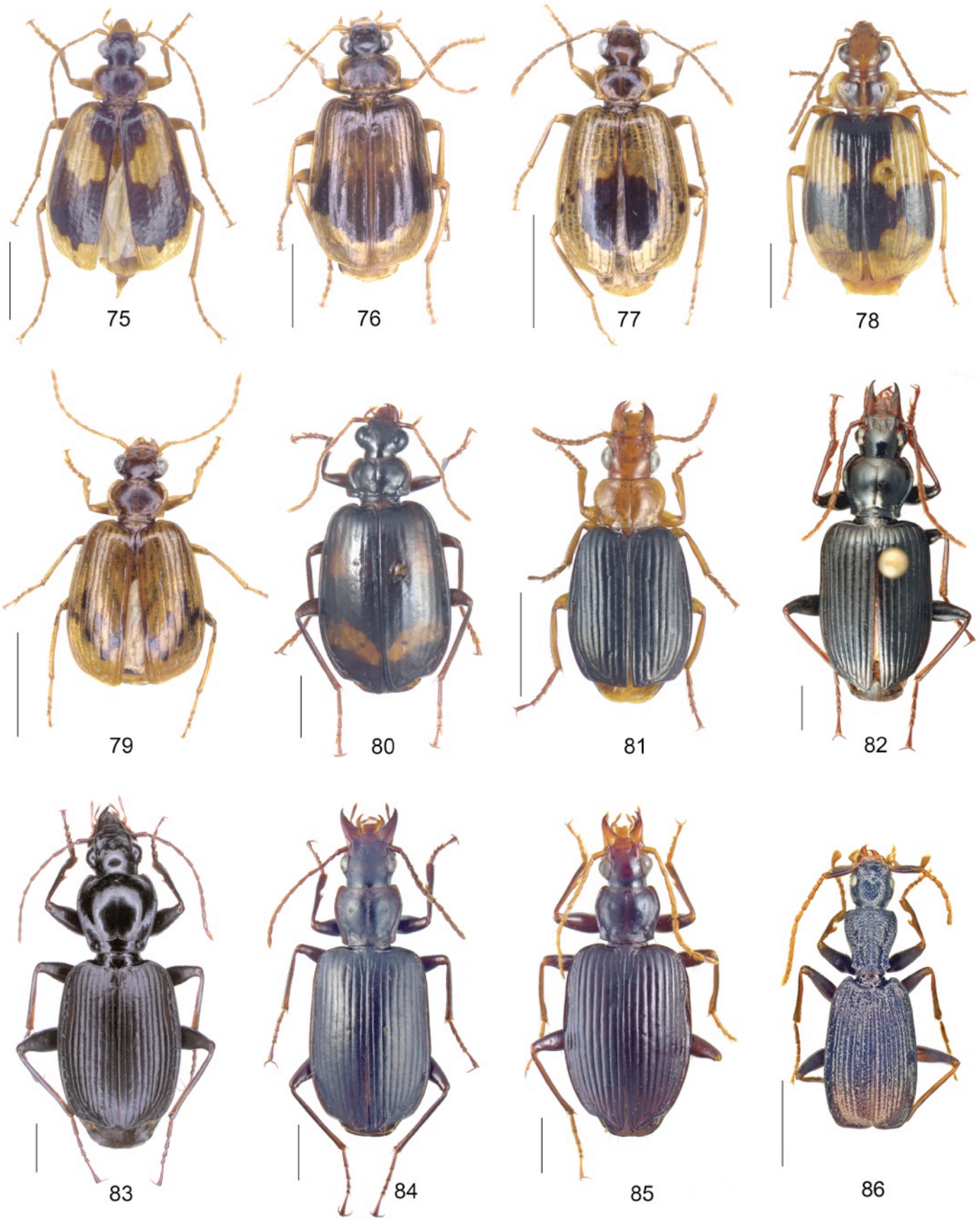

Fig. **75**-**86**. Habitus (scale bars: 2 mm).

75. *Lebia* sp. 4. **76**. *Lebia* sp. 5. **77**. *Lebia* sp. 6. **78**. *Lebia* sp. 7. **79**. *Lebia* sp. 8. **80**. *Lebia* sp. 10. **81**. *Lelis* sp. **82**. *Stenognathus batesi* Chaudoir, 1877. **83**. *Stenognathus onorei* Shpeley & Ball, 2000. **84**. *Stenognathus procerus* (Putzeys, 1878). **85**. *Stenognathus stricticollis* (Maindron, 1906). **86**. *Pseudaptinus* sp.

that the montane forest of the opposite side of the Andes, at the same elevation and the same latitude, 110 km east of Otonga, hosts a very different carabid community, except for a few widely distributed, fully winged species.

Information on habitat or on sampling methods are available for 97 species (Graph 2). Based on this dataset, the carabid species observed at Otonga are distributed across three broadly defined habitat types: riparian, edaphic (mainly in the forest leaf litter) and arboreal. Fallen rotting branches and logs constitute a fourth habitat, characterized by a few specialized genera (*Clinidium*, *Moriosomus*, *Diploharpus*, *Stenognathus*).

The riparian community is dominated by species of the tribe Platynini, followed at a distance by Cicindelini, Lachnophorini and Bembidiini. The arboreal community is relatively poor compared to that of the tropical lowlands studied in the previously cited works of Terry Erwin and collaborators. Conversely, the soil fauna is diverse and includes a significantly high number of wingless species, especially in Ozaenini (*Pachyteles*), Clivinini (*Ardistomis*), Platynini (*Glyptolenoides*, *Glyptolenus*), Lachnophorini (*Balligratus*), and Zuphiini (*Pseudaptinus*).

These characteristics clearly show that Otonga belongs to a transition zone between the lower montane forest, where carabid diversity is highest above the ground, and the upper cloud forest, where arboreal species gradually disappear as altitude increases, while carabids become the dominant group of predatory insects on the ground.

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Fig. 87. Forest biotope in the Otonga reserve (photo G. Allegro).

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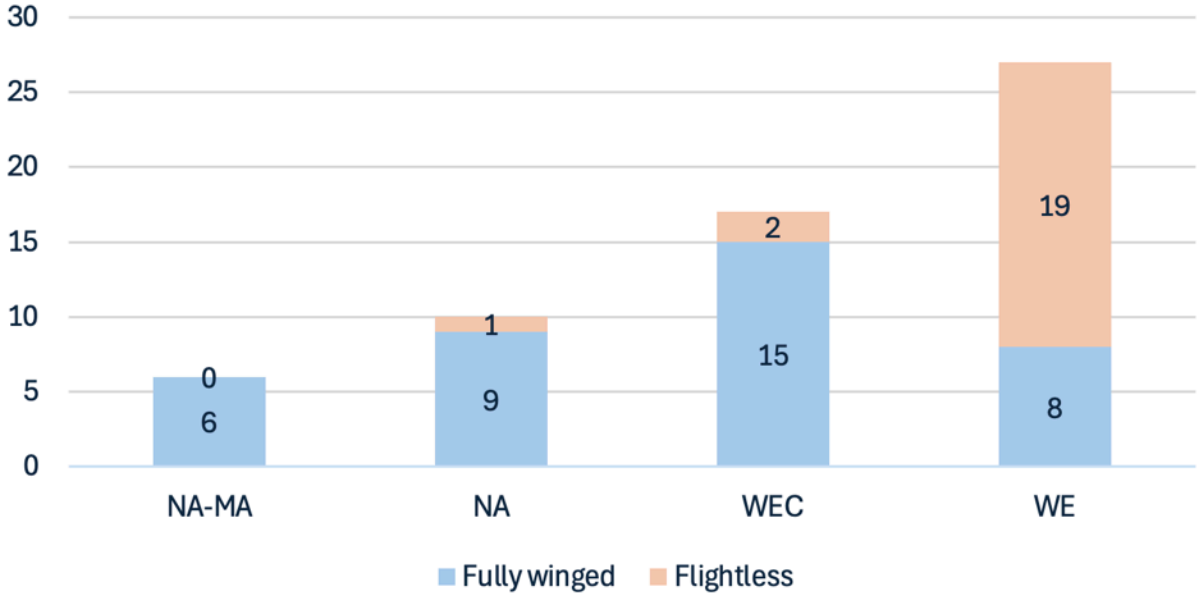
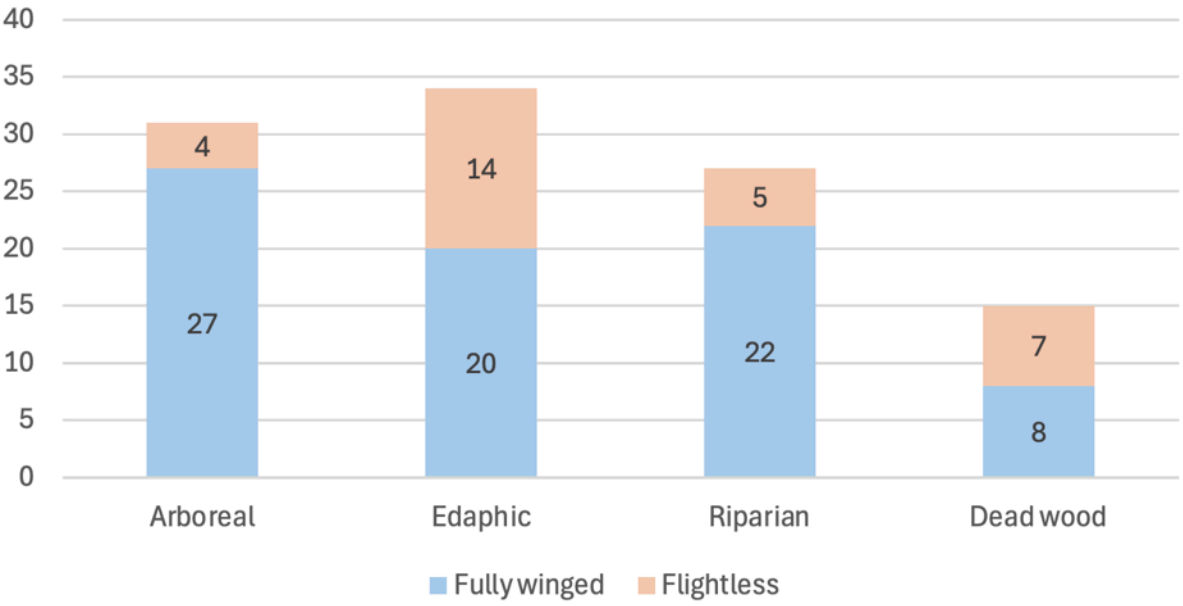


Graph 1. Geographical ranges of the carabid species recorded at Otonga.
NA-MA: Northern Andes and Mesoamerica. **NA**: Northern Andes. **WEC**: Western Ecuador and Chocó region in Colombia. **WE**: Western Ecuador.



Graph 2. Habitat of the carabid species recorded at Otonga.

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Bibliographic work. – PM & GA
Material study. – PM & GA
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Fig. **88**. View of the cloud forest of Otonga (photo G. Allegro).

Résumé

Moret P. & Allegro G., 2025. – Catalogue illustré des coléoptères Carabidae de la Réserve Naturelle d'Otonga (nord-ouest de l'Équateur), suivi de commentaires écologiques et biogéographiques. *Faunitaxys*, 13(17) : 1 – 21.

Cette étude présente le catalogue des 107 espèces de Carabidae connues à ce jour de la Réserve Naturelle d'Otonga, une forêt de montagne de 10 km^2 située dans le nord-ouest de l'Équateur, dans l'écorégion du Chocó, entre 1600 et 2200 m d'altitude. L'habitus de la plupart des espèces est illustré par des photographies, et des commentaires sont fournis sur leur écologie et leur distribution géographique.

Mots-clés. – Coleoptera; Carabidae; catalogue; biodiversité; forêt de montagne; Ecuador; Andes; écorégion du Chocó.

Faunitaxys

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SOMMAIRE

Catalogue illustré des coléoptères Carabidae de la Réserve Naturelle d'Otonga (nord-ouest de l'Équateur), suivi de commentaires écologiques et biogéographiques.

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Illustration de la couverture :
Montane forest at Otonga (photo G. Allegro).

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